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tensity and distribution of the pink coloration of the corollas in much the same manner that it affects the intensity and distribution of the green color of the leaves. For this reason an examination of the blossoms often affords one of the surest indications of the presence of mosaic in a tobacco plant. So far as the writer is aware, this distinctive appearance of the blossoms has not before been mentioned.

Specific Infection Apparently Responsible for the Development of Mosaic

The writer's experiments do not bear out the conclusions of earlier investigators that a true, infectious mosaic can be produced in plants by simply cutting them back.

If the infectious principle of mosaic is not accidentally introduced during the course of the experiments, and if the plants are absolutely free from the disease at the time of cutting, our experiments indicate that these plants may be cut back indefinitely without producing mosaic. Healthy plants have been constantly cut back, in some instances for long periods, without producing any symptoms of true mosaic. This was not accomplished, however, until thorough methods of sterilizing were observed, and the plants had been carefully screened and fumigated to exclude aphids.

Soil Infection

All experimental data at hand indicate that soil infection is not as important a factor as has been supposed in the origin of mosaic in the seed bed. In many experiments it has been shown beyond question that an outbreak of mosaic in young plants was not in any way connected with soil infection.

Aphids as Carriers of the Mosaic Disease

In the course of the writer's greenhouse experiments with tobacco, it was observed that the occurrence of mosaic in plants at various stages of development was in some manner frequently associated with aphid infestation.

Under control conditions it was observed that healthy tobacco plants were always obtained if these were grown in screened cages

fumigated at short intervals to prevent aphid infestation. On the other hand, when colonies of aphids present in the greenhouse were introduced into other cages containing healthy plants, infestation of the plants resulted in a wholesale occurrence of mosaic. This phase of the question has been taken up in cooperation with the Bureau of Entomology.

Following inoculation a somewhat variable inoculation period preceded the first symptoms of mosaic. This period and the subsequent symptoms appear to be practically the same in whatever manner the disease may be communicated to healthy plants.

In the light of the facts brought out in our experiments, it is not easy to see how the mosaic disease of tobacco can be logically placed in the category of purely physiological diseases. These facts strongly suggest the presence of a living, active microorganism.

It has been suggested at various times that the pollen grains may be the carriers of a mosaic disease. Earlier investigators have shown (and the writer has substantiated these results) that the seed of mosaic plants produces healthy plants. As a matter of fact, the general rule of self-fertilization of the tobacco flower means that the pollen grain and ovules are both produced by a mosaic plant. These facts are not favorable to the pollen-grain transmission of the disease.

H. A. ALLARD

BUREAU OF PLANT INDUSTRY,
WASHINGTON, D. C.

THE CONVOCATION WEEK MEETING OF SCIENTIFIC SOCIETIES

THE American Association for the Advancement of Science and the national scientific societies named below will meet at Cleveland, Ohio, during convocation week, beginning on December 30, 1912.

American Association for the Advancement of Science.—President, Professor Edward C. Pickering, Harvard College Observatory; retiring president, Professor Charles E. Bessey, University of Nebraska; permanent secretary, Dr. L. O. Howard, Smithsonian Institution, Washington, D. C.; gen-

eral secretary, Professor H. E. Summers, State College, Ames, Ia.; secretary of the council, Professor H. W. Springsteen, Western Reserve University, Cleveland, Ohio.

Section A—Mathematics and Astronomy.—Vice-president, Professor E. B. Van Vleck, University of Wisconsin; secretary, Professor George A. Miller, University of Illinois, Urbana, Ill.

Section B—Physics.—Vice-president, Professor Arthur Gordon Webster, Clark University; secretary, Dr. W. J. Humphreys, Mount Weather, Va.

Section C—Chemistry.—Vice-president, Professor W. Lash Miller, University of Toronto; secretary, Professor C. H. Herty, University of North Carolina, Chapel Hill, N. C.

Section D—Mechanical Science and Engineering.—Vice-president, Dr. J. A. Holmes, U. S. Reclamation Service; secretary, G. W. Bissell, Michigan Agricultural College, East Lansing, Mich.

Section E—Geology and Geography.—Vice-president, Professor James E. Todd, University of Kansas; secretary, Professor George F. Kay, University of Iowa.

Section F—Zoology.—Vice-president, Professor William A. Locy, Northwestern University; secretary, Professor Maurice A. Bigelow, Teachers College, Columbia University, New York City.

Section G—Botany.—Vice-president, Professor D. S. Johnson, The Johns Hopkins University; secretary, Professor Henry C. Cowles, University of Chicago, Chicago, Ill.

Section H—Anthropology and Psychology.—Vice-president, Dr. J. Walter Fewkes, Bureau of American Ethnology; secretary, Professor George Grant MacCurdy, Yale University, New Haven, Conn.

Section I—Social and Economic Science.—Vice-president, John Hays Hammond, New York City; secretary, Seymour C. Loomis, 69 Church St., New Haven, Conn.

Section K—Physiology and Experimental Medicine.—Vice-president, Professor J. J. McCleod, Western Reserve University; secretary, Professor George T. Kemp, 8 West 25th St., Baltimore, Md.

Section L—Education.—Vice-president, Professor J. McKeen Cattell, Columbia University; secretary, Professor C. Riborg Mann, University of Chicago, Chicago, Ill.

The Astronomical and Astrophysical Society of America.—December 30—January 4. President,

Professor E. C. Pickering, Harvard College Observatory; secretary, Professor Philip Fox, Dearborn Observatory, Evanston, Ill.

The American Mathematical Society.—December 31—January 2. President, Professor H. B. Fine, Princeton University; secretary, Professor F. N. Cole, 501 West 116th Street, New York City.

The American Federation of Teachers of the Mathematical and the Natural Sciences.—Between December 30—January 4. President, Professor C. R. Mann, University of Chicago; secretary, Eugene Randolph Smith, The Park School, Baltimore, Md.

The American Physical Society.—President, Professor W. F. Magie, Princeton University; secretary, Professor Ernest Merritt, Cornell University, Ithaca, N. Y.

The American Society of Biological Chemists.—December 30—January 1. President, Professor A. B. Macallum, University of Toronto; secretary, Professor A. N. Richards, University of Pennsylvania, Philadelphia, Pa.

The American Physiological Society.—December 30—January 1. President, Dr. S. J. Meltzer, Rockefeller Institute for Medical Research, New York City; secretary, Professor A. J. Carlson, University of Chicago, Chicago, Ill.

The Society for Pharmacology and Experimental Therapeutics.—December 30—31. President, Professor John J. Abel, The Johns Hopkins University; secretary, Dr. John Auer, Rockefeller Institute for Medical Research, New York City.

The American Society of Naturalists.—January 2. President, Professor E. G. Conklin, Princeton University; secretary, Professor A. L. Treadwell, Vassar College, Poughkeepsie, N. Y.

The American Society of Zoologists.—December 30—January 1. *Eastern Branch:* President, Dr. A. G. Meyer, Tortugas, Fla.; secretary, Professor J. H. Gerould, Dartmouth College. *Central Branch* (in charge of meeting): president, Professor H. B. Ward, University of Nebraska; secretary, Professor W. C. Curtis, University of Missouri, Columbia, Mo.

The Association of American Anatomists.—December 31—January 2. President, Professor Ross G. Harrison, Yale University; secretary, Professor G. Carl Huber, 1330 Hill Street, Ann Arbor, Mich.

The Entomological Society of America.—December 31—January 1. President, Professor Stephen A. Forbes, University of Illinois; secretary,

Professor Alexander D. MacGillivray, 603 West Michigan Ave., Urbana, Ill.

The American Association of Economic Entomologists.—January 1-3. President, W. D. Hunter, Dallas, Tex.; secretary, A. F. Burgess, Melrose Highlands, Mass.

The American Microscopical Society.—December 31-January 1. President, Dr. F. D. Heald, Philadelphia; secretary, T. W. Galloway, Millikin University, Decatur, Ill.

The Botanical Society of America.—December 31-January 3. President, Professor L. R. Jones, University of Wisconsin; secretary, Dr. George T. Moore, Botanical Garden, St. Louis, Mo.

Botanists of the Central States.—Between December 30 and January 4. President, Professor T. H. Macbride, University of Iowa; secretary, Professor Henry C. Cowles, University of Chicago, Chicago, Ill.

The American Phytopathological Society.—December 31-January 3. President, Dr. G. P. Clinton, New Haven Agricultural Experiment Station; secretary, Dr. C. L. Shear, Department of Agriculture, Washington, D. C.

The American Nature-Study Society.—December 30-31. President, Professor Benjamin M. Davis, Miami University; secretary, Dr. Elliot R. Downing, University of Chicago, Chicago, Ill.

The Association of Official Seed Analysts.—January 2. President, Dr. E. H. Jenkins, New Haven, Conn.; secretary, E. Brown, U. S. Department of Agriculture, Washington, D. C.

American Association of Official Horticultural Inspectors.—January 2-3. President, Dr. T. J. Headley, New Brunswick, N. J.; secretary, T. B. Symons, College Park, Md.

The American Anthropological Association.—December 30-January 3. President, Dr. J. Walter Fewkes, Bureau of Ethnology; secretary, Professor George Grant MacCurdy, Yale University, New Haven, Conn.

The American Folk-Lore Society.—January 1. President, John A. Lomax, University of Texas; secretary, Dr. Charles Peabody, Peabody Museum, Cambridge, Mass.

The American Psychological Association.—December 30-January 1. President, Professor Edward L. Thorndike, Columbia University; secretary, W. Van Dyke Bingham, Dartmouth College, Hanover, N. H.

The Sigma Xi Convention.—January 2. President, Professor Henry T. Eddy, University of Minnesota; secretary, Dr. Dayton C. Miller, Case School of Applied Science, Cleveland, Ohio.

Gamma Alpha Graduate Scientific Fraternity.—December 31. President, Professor William Crocker, University of Chicago; secretary, Professor H. E. Howe, Randolph-Macon College, Ashland, Va.

NEW HAVEN

The Geological Society of America.—December 28-31. President, Professor H. L. Fairchild, Rochester University; secretary, Dr. Edmund Otis Hovey, American Museum of Natural History, New York City.

The Association of American Geographers.—December 27-30. President, Professor Rollin D. Salisbury, University of Chicago; secretary, Professor Albert Perry Brigham, Hamilton, N. Y.

The Paleontological Society.—December 30-31. President, David White, U. S. Geological Survey; secretary, Dr. R. S. Bassler, U. S. National Museum, Washington, D. C.

BOSTON

The American Economic Association.—December 27-31. President, Professor Frank A. Fetter, Princeton University; secretary, Professor T. N. Carver, Harvard University, Cambridge, Mass.

The American Statistical Association.—December 27-30. President, Professor Walter F. Willcox, Cornell University; secretary, Carroll W. Doten, 491 Boylston Street, Boston, Mass.

The American Sociological Society.—December 27-31. President, Professor Albion W. Small, University of Chicago; secretary, Scott E. W. Bedford, University of Chicago, Chicago, Ill.

The American Association for Labor Legislation.—December 27-28. President, Professor Henry R. Seager, Columbia University; secretary, Dr. John B. Andrews, 131 East 23d St., New York City.

The American Home Economics Association.—December 30-31. President, Miss Isabel Bevier, University of Illinois; secretary, Benjamin R. Andrews, Teachers College, Columbia University, New York City.

NEW YORK CITY

The Society of American Bacteriologists.—December 31-January 2. President, Dr. Wm. H. Park, New York City; secretary, Charles E. Marshall, Amherst, Mass.